| Work Orde | | 2756 | | | *102 | 756* | | | | | | | Page 1 |
|---|-----------------------------|--------------------------|---|--------------------------------|------------------------|----------------------|-------------|--------------|--------------|-------|---------------|------------------|----------------|
| Revision ID: | 646.9711 | ** · ******* | | | Accept | *N90 | 0040 | 100 |)* | Setup | Start Stop | I VI | S1* |
| | Blade 6/11/13 6/11/13 | Start Qty: Req'd Qty: | | *60* *60* | | Cust Iten Custome | | | | | | • - | S2* |
| Approvals: | Process Plan | n: MLJ | | Date:/ <u>3-06-/3</u> Date: | Tooling: SPC (Y/N): | | Date: | | | Run | Start Stop | *N *N | R1* R2*、 |
| Sequence ID/ Work Center ID | - | Operation Description | *************************************** | | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accep Qty | t Rej | | Reject Number | Insp. Stamp |
| Draw Nbr 646.9700 - 100 *100 * Bandsaw Jeaspa Bandsaw | | | curo ut Blank at 4 | 4.625" | 0.00 N | ÍH 13/c | ×/13 | | 260 | 2 K | | | |
| *110 *110 *HAAS I HAAS CNC vertical | machine #1 | M 1-I D' | emo | | 0.00 | e NH | 13/06 | /28 | G | 10 | Æ | | |

2- deburr and break all sharp edges except otherwise noted

| DQA: | | . Date: | | | | | | _ | | | | TAART |
|---------------|----------------------|-------------|----------|----------|------------------------------|----------|----------|----------------------------|----------|---------------|---------------|--------------------|
| | | D-1- | | | WORK ORDER NON- | -C(| ONFO | RMANCE / UPDATE | 14 | | | AEROSPACE |
| QA Closed: | | Date: | | - | | | _ | | VV | ork Order up | date only | |
| Work Orde | r: | | | | DISPOSITION | | 1 | AGAIN | ST DE | PARTMENT | /PROCESS | |
| | | | | _ | Rework | 1 | | Skid-tube Crosstul | oe 🗀 | 7 | Water Jet | Engineering |
| Part N | Ο. | | | | Scrap | 1 | | Machining Small Fa | | Pro | d. Eng. Coor. | Quality |
| | | | | | Use-as-is | 1 | | noforming Finishi | าg | | re/Packaging | Other |
| NCR N | lo. | | | | Suspected Unapproved | 1 | | Large Fab Composi | te | 1 | Supplier | 1 📑 |
| | | | | | | | i | | | <u>-</u> | | |
| Root | | | | Desci | ription of work order update | 1 | Initial | Action | | Sign & | | |
| Cause | Date | Step | Qty | | or non-conformance | Ch | nief Eng | Description | | Date | Verification | QC Inspector |
| Design | | | | | | | | | | | | |
| Doc/Data | | | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | | |
| Handling/Pre | | | | | | | | | | | | |
| Material | | İ | | | | | | | | | | |
| Operator | | | } | | | | | | | | | |
| Offset/Setup | | | | *** | | | | | | | | |
| Process | | 1 | | | | | | | | | | |
| Supplier | | 1 | | | | | | | | | | |
| Training | | | | | | | | | | | | |
| Transport | | | | | | | | | | | | |
| Unapproved | | ! | <u> </u> | | | <u></u> | | | | | <u> </u> | |
| · - | | | | | | FA | ULT CA | TEGORY | | | | · • |
| Landin F | g Gear | | | | General | _ | 1 /- | | | 7 | . – | ٦ |
| - | Bending | | | \vdash | Bend | - | 1 | Program | - | Outside Dim | <u> </u> | Pressure/Forced |
| - | Centre No | ot Concer | ntric | <u> </u> | BOM/Route | ┝ | Grain | | <u> </u> | Over/Under | ⊢ | Set-up |
| | Cracks | L fo: | 4 | <u> </u> | Broken/Damage/Defect | <u> </u> | Hardwa | | \vdash | Part Incorred | - | Temperature/Cure |
| - | Crimp/Ki | пк/кірріе | e/Wave | - | Burrs | <u> </u> | 1 | ion Incomplete/Unqualified | \vdash | Part Lost/Mi | ssing | Weld |
| - | Cuffs | | | - | Contamination | ⊢ | 4 | tions Incomplete/Unclear | \vdash | Part Moved | | Wrong Stock Pulled |
| } | Crushing | | | - | Countersink | - | -1 | gned/off center | - | Positioned V | | 7045 |
| } | Heat Trea | | Tub- | \vdash | Cut Too Short | \vdash | Mislabe | | L | Power Loss/ | ourge | Other |
| } | Inspectio | • | edur | ļ | Drawing Drill Holos | <u> </u> | Misread | | | | | ·· |
| . } | Marks/Ch | | | - | Drill Holes Finish | \vdash | Off-set | | | | | |
| ŀ | Turning S Wave/Tw | | | \vdash | Fit/Function | \vdash | 4 | Calibration Sequence | | | | |
| I | 1 4 4 CJ V C / 1 V | HULLING FOR | | | 4 1 T | | | ICMICOLE | | | | l l |

| Work Orde | | 102756 | · · | *10 | | - - - | Page 2 | 2 | | | |
|---|--------------------|---|-----------------|-----------------------------|---------------------------|-----------------------------|---------------|--------------------|------------------|------------------|---|
| Item ID: Revision ID: Item Name: | 646.971 Blade | l | , | Accept | *N900 | 04010 0 |)* s | etup Start Stop | 171. | S1* S2* | • |
| Start Date: Required Date: Reference: | 6/11/13 6/11/13 | Start Qty: 60.00 Req'd Qty: 60.00 | *60* *60* | | Cust Item II Customer: | D; | | | | | |
| Approvals: | Process QC: | s Plan: | Date: | Tooling: SPC (Y/N): | | te: | R | un Start Stop | 1/1 | R1* Rク* | |
| Sequence ID/ Work Center II 120 *120* QC Quality Control | D | Operation Description QC2- Inspect parts off ma | achine FAI/FAIB | Set Up/ Run Hour 0.00 | 1/12 | Tool # Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp | - |
| *130 *130* QC Quality Control | | QC8- Inspect parts - seco | nd check | 0.00 | D.a 13/07/04 | , | 60 | ¢ | | 0AS 08 2-8 | |

140

Outsource process - Heat Treat

0.00

140

Outsource1

Memo

0.00

Outsource process - Heat Treat

HEAT TREAT AS PER DWG, SEE NOTE #3

ISSUE P/O: <u>2042</u>5

CZ13107104 (60).

| WORK ORDER NON-CONFORMANCE / UPDATE Work Order: DISPOSITION AGAINST DEPARTMENT/PROCESS | DQA: | | _ Date: | | | MODIC ORDER MON | | 201521 | 20400CC / 11C | NATE | | | *** | DART |
|--|---------------|-------------------------------------|--------------|-------|---------------|------------------------------|------------|------------|----------------|----------------|--------------|--------------|---------------|--------------------|
| Part No. Part No. Part No. Skid-tube Skid-tu | QA Closed: | | Date: | | | WORK ORDER NON- | -C(| ONFO | RIVIAINCE / UF | | ork Order up | odate only | \neg | AEROSPACE |
| Part No | Work Order | | | | | DISPOSITION | | | | AGAINST D | EPARTMENT, | /PROCESS | | |
| Part No. Scrap Scrap Scrap Suspected Unapproved Large Fab Sign & Prod. Eng. Coor Quality Other Supplier Other Other Supplier Other Other Supplier Other Other Other Supplier Other | . Work Order | | | · | | Rework | I | | Skid-tube | Crosstuhe | ٦ | Water let | \neg | Engineering |
| NCR No. Use-as-is Suspected Unapproved Use-as-is Large Fab Composite Supplier Other Supplier Other Composite Supplier Other Supplier Other Composite Composite Supplier Other Composite Composite Supplier Other Composite Composite | Part No | 0 | | | | | | | — | <u> </u> | Pro |) | \dashv | |
| Root Cause Date Step Qty Or non-conformance Chief Eng Description Date Verification QC Inspector Design Description Grant Description Grant Description Date Verification QC Inspector Description Date Date Date Date Date Date Date Date | | · | | · | — i | ` | | | | ļ | | <u>-</u> | \dashv | · — |
| Root Cause | NCR N | O . | | | ! | · | | | | ~ | 1 | | \dashv | |
| Date Step Qty | | | | | | | | | | | | | | |
| Dec/Data | Root | | | | Descr | ription of work order update | | Initial | Acti | ion | Sign & | | Τ | |
| Doc/Data Equip/Tooling Handling/Pre Material Operator Offset/Setup Process Supplier Training Training Training Training Dentor Offset/Setup Other Training Other Oth | Cause | Date | Step | Qty | | or non-conformance | Ct | nief Eng | Descri | iption | Date | Verification | | QC Inspector |
| Equip/Tooling Handling/Pre Handling H | Design | | | | | | | | | | | | | |
| Handling/Pre Material Operator Offset/Setup Operator | Doc/Data | | | | | | | | | | | | | |
| Material Operator Offset/Setup Operator Offset/Setup Process Offset/Setup Process Offset/Setup Offset/Setup Offset/Setup Offset/Setup Offset/Setup Offset/Setup Offset Offset/Setup Offset Offset/Setup Offset Offse | Equip/Tooling | | | | | | | | | | | | | |
| Operator Offset/Setup Process Supplier Training Transport Unapproved Bending Gear General Bending Gear General Centre Not Concentric BoM/Route Grain Over/Under tolerance Set-up Grain Over/Under tolerance Set-up Hardware Part Incorrect Temperature/Cure Crimp/Kink/Ripple/Wave Burrs Inspection Incomplete/Unqualified Part Lost/Missing Weld Weld Countersink Mislagned/off center Positioned Wrong Heat Treat Cut Too Short Mislabeled Power Loss/Surge Other Inspection Strip in Tube Drawing Misread Misread Drill Holes Off-set | Handling/Pre | | | | | | | | | | | | | |
| Offset/Setup Process Supplier Training Transport ' Unapproved Bend Folio/Program Outside Dimensions Pressure/Forced Centre Not Concentric BoM/Route Grain Over/Under tolerance Set-up Cracks Broken/Damage/Defect Hardware Part Incorrect Temperature/Cure Crimp/Kink/Ripple/Wave Burrs Inspection Incomplete/Unqualified Part Lost/Missing Weld Cuffs Contamination Instructions Incomplete/Unclear Part Moved Wrong Stock Pulled Crushing Countersink Misaligned/off center Power Loss/Surge Other Inspection Strip in Tube Drawing Misread Marks/Chatter Drill Holes Off-set | Material | _ | | | | | | | | | | | 1 | |
| Process Supplier Training Transport ' Unapproved Dending Gear General | Operator | _ | | | | | | | | | | | | |
| Supplier Training Transport ' Unapproved FAULT CATEGORY Cantre Not Concentric BoM/Route Broken/Damage/Defect Hardware Part Incorrect Temperature/Cure | Offset/Setup | _ | | | | | | | | | | | | |
| Training Transport ' Unapproved | Process | _ | | | | | | | | | | | | |
| Transport Unapproved Unappr | Supplier | | | | | | | | | | | | | |
| Landing Gear General | | _ | | | | | | | | | | | i | |
| FAULT CATEGORY Landing Gear General Bending Bend Centre Not Concentric BOM/Route Broken/Damage/Defect Crimp/Kink/Ripple/Wave Cuffs Contamination Crushing Crushing Heat Treat Inspection Strip in Tube Inspection Strip in Tube Marks/Chatter FOlio/Program Outside Dimensions Pressure/Forced Grain Over/Under tolerance Set-up Part Incorrect Part Incorrect Part Lost/Missing Weld Instructions Incomplete/Unqualified Part Lost/Missing Weld Wrong Stock Pulled Misaligned/off center Positioned Wrong Power Loss/Surge Other Other | l - | _ | | | | | | | - | | | | | |
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| Cracks Broken/Damage/Defect Hardware Part Incorrect Temperature/Cure Crimp/Kink/Ripple/Wave Burrs Inspection Incomplete/Unqualified Part Lost/Missing Weld Cuffs Contamination Instructions Incomplete/Unclear Part Moved Wrong Stock Pulled Crushing Countersink Misaligned/off center Positioned Wrong Heat Treat Cut Too Short Mislabeled Power Loss/Surge Other Inspection Strip in Tube Drawing Misread Marks/Chatter Drill Holes Off-set | <u> </u> | | | | - ⊢ | | ⊢ | | rogram | - | | + | | |
| Crimp/Kink/Ripple/Wave Burrs Inspection Incomplete/Unqualified Part Lost/Missing Weld Cuffs Contamination Instructions Incomplete/Unclear Part Moved Wrong Stock Pulled Crushing Countersink Misaligned/off center Positioned Wrong Heat Treat Cut Too Short Mislabeled Power Loss/Surge Other Inspection Strip in Tube Drawing Misread Marks/Chatter Drill Holes Off-set | | | ot Concer | ntric | | , | \vdash | 1 | | <u> </u> | _ | | | • |
| Cuffs Contamination Instructions Incomplete/Unclear Part Moved Wrong Stock Pulled Crushing Countersink Misaligned/off center Positioned Wrong Heat Treat Cut Too Short Mislabeled Power Loss/Surge Other Inspection Strip in Tube Drawing Misread Off-set | - | _ | ink/Binnla | Maus | - | - ' | <u> </u> | 4 | | avalified | - | | | · |
| Crushing Countersink Misaligned/off center Positioned Wrong Heat Treat Cut Too Short Mislabeled Power Loss/Surge Other Inspection Strip in Tube Drawing Misread Marks/Chatter Drill Holes Off-set | - | _ | шк/кірріе | yvave | | | ┝ | ⊣ ` | | · — | - | 2211.B | — | |
| Heat Treat Cut Too Short Mislabeled Power Loss/Surge Other Inspection Strip in Tube Drawing Misread Marks/Chatter Drill Holes Off-set | - | | . | | H | | - | 4 | · · | inclear | _ | L Vrang | | rrong stock Pulled |
| Inspection Strip in Tube Drawing Misread Off-set | - | | - | | | | \vdash | | | | - | | \neg_{\sim} | ther |
| Marks/Chatter Drill Holes Off-set | | | | Tube | | | <u> </u> | -1 | | | Trower ross/ | onige [| | uiei |
| | - | _ | | iuoe | _ | ' ' | \vdash | 4 | 1 | | | | | |
| Training Sequence Control Cont | | F-4 | | - | | \vdash | -1 | alibration | | | | | | |
| Wave/Twist in Tube Fit/Function Out of Sequence | | Turning Sequence Wave/Twist in Tube | | - | | | - i | | | | | | | |

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| Work Orde | | 02756 | | *10 | 2756* | | | | | | Page 3 |
|---|--|--|-------------------------|------------------------------|--------------------------|------------|------|--------------------|---------------|---------|----------------|
| Item ID: Revision ID: | _ · == 646.9711 Blade | | | Accept | *N900 | 040 | 1003 | k Setup | Start Stop | *NS | 1* |
| Item Name: Start Date: Required Date: Reference: | 6/11/13 | Start Qty: 60.00 Req'd Qty: 60.00 | *60* *60* | | Cust Item I Customer: | D: | | | | IMC | 17 |
| Approvals: | Process P | lan: | Date: | Tooling: SPC (Y/N): | - : = - | ate: | | Run | Start Stop | *NF | ?1* ?2* |
| Sequence ID/ Work Center II | | Operation Description Receive & Inspect for Da | amage & Mat'l Certs | Set Up/ Run Hours 0.00 | Tool ID | Tool # | | Accept Re Qty Q | | | Insp. Stamp |
| *150* Packaging Packaging | | Memo | | 0.00 | | | _ | | 79 | 1/25 | (6 <u>u</u> |
| 155 *155 * | | QC5- Inspect part compl | leteness to step on W/O | 0.00 | | | (| 40 . | | | |
| QC Quality Control | | Memo | | 0.00 13,7 | 7.25 | | - | Junt | | , | ! |
| *160 *160* | | Spray Painting per QSI0 | 05 4.2 | 0.00 | | | | .60 | ø | ø | A8 |
| SprayPaint Spray Painting | | Memo PRIME AS | PER DWG, SEE NOTE #4 | 0.00 | | | - | . ~U | | <i></i> | 13-8-14 |

PRIMER BATCH: 126022

| Date: | | | . WORK ORDER NON | ~ | | 38488ICE / LI | IDDATE | | | | *DART | | |
|---------------|----------|--------------|------------------|----------|------------------------------|-------------------|----------|---------------------|---------------------------------------|---------------|---------|---------------|--------------------|
| QA Closed: | | Date: | | | WORK ORDER NON- | -((| JINFOR | RIVIAINCE / U | | Work O | rder up | odate only | AEROSPACE |
| Work Orde | | | | : | DISPOSITION | | | | AGAINST | DEPART | MENT, | /PROCESS | |
| work Orde | :r | | | | Rework | 1 | | Skid-tube | Crosstube | \neg | | Water Jet | Engineering |
| Part N | io. | | | | Scrap | | | Vachining Vachining | Small Fab | | Pro | d. Eng. Coor. | Quality |
| | | | | | Use-as-is | | | noforming | Finishing | | | re/Packaging | Other |
| NCR N | lo | | | | Suspected Unapproved | | | Large Fab | Composite | | | Supplier | |
| Root | | | | Desc | ription of work order update | ! | nitial | Ac | tion | Sig | n & | | |
| Cause | Date | Step | Qty | | or non-conformance | Ch | ief Eng | Desc | ription | D | ate | Verification | QC Inspector |
| Design | | | | | | | | | | | | | |
| Doc/Data | | | | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | | | |
| Handling/Pre | | | İ | | | | | | | | | | |
| Material | | | | | | | | | | | | | |
| Operator | | | | | | | | | | | | | · |
| Offset/Setup | | | | | | | | | | | | | |
| Process | | | | | | | | | | | | ļ | |
| Supplier | | | | | | | | | | | | | |
| Training | | | | | | l | | | | | | [| |
| Transport | _ | | | | | l | | | | | | | |
| Unapproved | | <u> </u> | <u> </u> | | | <u> </u> | | L | | | | | |
| | • | | | | | FAI | ULT CAT | EGORY | | | | | <u> </u> |
| Landir | ng Gear | | | | General | _ | 1 | | r | | | _ | - . |
| | Bending | | | \vdash | Bend | L | Folio/P | rogram | , | | | ensions | Pressure/Forced |
| | | ot Conce | ntric | - | BOM/Route | | Grain | | | | | tolerance | Set-up |
| | Cracks | | | | Broken/Damage/Defect | igspace | Hardwa | | | | ncorre | | Temperature/Cure |
| | | nk/Ripple | e/Wave | <u> </u> | Burrs | $ldsymbol{f eta}$ | 1 ' | on Incomplete/U | · · · · · · · · · · · · · · · · · · · | | _ost/Mi | issing | Weld |
| | Cuffs | | | | Contamination | <u> </u> | 4 | ions Incomplete/ | • | - | Moved | | Wrong Stock Pulled |
| | Crushing | | | <u> </u> | Countersink | <u> </u> | 4 | ned/off center | į | _ | ioned V | · · · | ¬ . |
| | Heat Tre | | | <u> </u> | Cut Too Short | \vdash | Mislabe | | Į | Powe | r Loss/ | Surge | Other |
| | | n Strip in | Tube | \perp | Drawing | <u></u> | Misread | 1 | | | | | |
| | Marks/C | | | \perp | Drill Holes | \sqsubseteq | Off-set | | | | | | |
| ļ | _ | Sequence | | _ | Finish | $ldsymbol{oxed}$ | 4 | Calibration | | | | | |
| | Wave/Tu | vist in Tul | be | | Fit/Function | | Out of S | equence | | | | | |

| Work Ordi une-12-13 9:1: | er ID 102 3:28 AM | | • | | 756* | | | | | Page 4 |
|--|----------------------|--|--------------------|------------------------------|---------------------------|---------------------|---------------------|-------------------|----------|-----------------------------|
| tem ID: Revision ID: tem Name: | | 1 NE 1992 TO 1 1 1 1 1 1 1 1 | | Accept | *N9000 | <u>0</u> 40100 |)* s | Setup Start Stop | ריעו | 1* 2* |
| itart Date: Required Date: Reference: | 6/11/13 : 6/11/13 | Start Qty: 60.00 Req'd Qty: 60.00 | *60* *60* | | Cust Item IE Customer: | D: | | | | |
| Approvals: | Process Plan | n: | Date: | Tooling: _ SPC (Y/N): | Dat | te: | F | Run Start Stop | *NR | !1* !2* |
| Sequence 1D/ Work Center I 170 *170* QC Quality Control | D | Operation Description QC14- Inspect Spray Pair | nt | Set Up/ Run Hours 0.00 | Tool ID | Tool # Plan Code | Accept Qty 60 | | Number S | 045 05 05 05 08 |
| *180 *180* Packaging Packaging | | Identify as per dwg & Sto | ock Location: MF | 0.00 | | | Leo | Χ . | (| 3-8-19 |
| 190 *190* QC Quality Control | | QC21- Final Inspection - Memo | Work Order Release | 0.00 | | | | 13/9, | 16 AS | 9-03 |

| DQA: | | | Date: | | | WORK ORDER NON | I-C0 | ONFOI | RMANCE / UPDATE | | | | | DART |
|--|------|---|---|-------|-------------|--|------|--|---|----------|--|--|---|---|
| QA Closed: | | | Date: | | | WORK ORDER NOR | | J. W. O. | MINITOL / OI DATE | W | ork Order u | pdate only | | AEROSPACE |
| Work Orde | er: | | | | | DISPOSITION | | | AGAINS | ST DE | PARTMENT | /PROCESS | | , |
| Part N | • | | | | | Rework Scrap Use-as-is Suspected Unapproved | | | Skid-tube Crosstub Machining Small Fa noforming Finishir Large Fab Composit | nb ng | - | Water Jet d. Eng. Coor. re/Packaging Supplier | | Engineering Quality Other |
| Root | | | | | Desc | ription of work order update | | nitial | Action * | | Sign & | | | |
| Cause | | Date | Step | Qty | | or non-conformance | Ct | nief Eng | Description | | Date | Verificatio | ก | QC Inspector |
| Design Doc/Data Equip/Tooling Handling/Pre Material Operator Offset/Setup Process Supplier Training Transport Unapproved | | | | | | | | | | | | | | |
| | | | • | | | | FA | ULT CAT | TEGORY | | • | • | | |
| Landi | ng C | ear | | | | General | | _ | | | _ | | | _ |
| | | Bending Centre No Cracks Crimp/Kir Cuffs Crushing Heat Trea Inspection Marks/Ch Turning S | nk/Ripple at n Strip in natter | /Wave | | Bend BOM/Route Broken/Damage/Defect Burrs Contamination Countersink Cut Too Short Drawing Drill Holes Finish | | Grain Hardwa Inspect Instruct Misalig Mislabe Misread Off-set | ion Incomplete/Unqualified tions Incomplete/Unclear gned/off center eled | | Outside Dim Over/Under Part Incorre Part Lost/Mi Part Moved Positioned V Power Loss/ | tolerance ct issing Vrong | | Pressure/Forced Set-up Temperature/Cure Weld Wrong Stock Pulled Other |
| | L. | Wave/Tw | ist in Tub | e | | Fit/Function | | Out of S | Sequence | | | | | |

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Picklist Print

June-12-13 9:13:27 AM

Work Order ID:

102756

Parent Item:

646.9711

Parent Item Name:

Blade

Start Date: 6/11/13

Required Date: 6/11/13

Start Qty: 60.00

Required Qty: 60.00

Comments:

IPP REV:A NEW ISSUE 12/09/24 JFS VERIFY BY:DD

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| MSTEEL-A2- B0.500X1.250 AISI A2 TOOL STEEL BA | AR, 0.500 X 1.250 | Purchased | No | | - | 100 | ſ | 19.2556 | 0.386 | 24.378948 | <u> </u> | | |
| | | | | Location | | Loc Oty | | c Code | | | | | 1 |



MAT009 19.2556001 123250 0.0000001 **125350** 19.2556

* could not pull out material.

| DQA: | | | _ Date: | | | | | | _ | | | | ` | TAACT |
|---------------|---------------|-----------|-------------|----------|----------|------------------------------|----------|----------|-------------------|---------------|---------------|---------------|--------------|--|
| QA Closed: | | | Date: | | | WORK ORDER NON | -CC | ONFO | RMANCE / U | | Vork Order up | odate only | | AEROSPACE |
| | | <u></u> | | · · · · | | 0.00000 | | _ | | | | | | 9.00 |
| Work Orde | er: | | | | | DISPOSITION | | | | AGAINST L | DEPARTMENT, | PROCESS | | |
| | - | | | | | Rework | , | | Skid-tube | Crosstube | | Water Jet | | Engineering |
| Part N | lo. | | | | | Scrap | | ı | Machining | Small Fab | Pro | d. Eng. Coor. | | Quality |
| | | | | | | Use-as-is | | Thern | noforming | Finishing | Rec/Stor | e/Packaging | | Other |
| NCR N | 10. | | | | | Suspected Unapproved | | | Large Fab | Composite | | Supplier | | |
| Root | | | | | Desc | ription of work order update | l | nitial | Act | tion | Sign & | | Т | |
| Cause | | Date | Step | Qty | | or non-conformance | Ch | ief Eng | Descr | ription | Date | Verification | n 📗 | QC Inspector |
| Design | | | | | | | | | | | | | | |
| Doc/Data | _ | |] | | | | | | | | | | | |
| Equip/Tooling | | | | | l | | | | | | | | | |
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| Material | _ | | | | | | | | | | · | | | |
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| Offset/Setup | | | | | | | | | • | | : | | | |
| Process | | | | | | | | | | | | | | |
| Supplier | | | | | <u> </u> | | | | | | | | Ī | |
| Training _ | | | | | | | | | | | | | | |
| Transport | | | 1 | | | | | | | | | | | |
| Unapproved | | | | <u> </u> |] | | EA. | ILT CAT | I TEGORY | | | | | <u>. </u> |
| Landir | C | | | | | General | FA | OL! CA | EGORT | | | | | |
| Canon | ıg C | Bending | | | | Bend | | Eolio/P | rogram | ſ | Outside Dim | ensions | \Box | Pressure/Forced |
| } | | - | ot Concer | atric | - | BOM/Route | \vdash | Grain | TOBIUM | F | Over/Under | | \mathbf{H} | Set-up |
| } | \exists | Cracks | or concer | itiit | | Broken/Damage/Defect | | Hardwa | re | F | Part Incorred | | ⊢ – | Temperature/Cure |
| • | | | nk/Ripple, | /Wave | - | Burrs | 一 | 1 | ion Incomplete/Ur | ngualified - | Part Lost/Mi | | \vdash | Weld |
| • | | Cuffs | my mppic | ,c | | Contamination | ┢ | 1 ' | ions Incomplete/ | · | Part Moved | | \vdash | Wrong Stock Pulled |
| | | Crushing | | | _ | Countersink | | 4 | ned/off center | | Positioned V | Vrong | | . 0 |
| | | Heat Trea | | | | Cut Too Short | - | Mislabe | | | Power Loss/ | - 1 | \Box | Other |
| | - | | n Strip in | Tube | | Drawing | | Misread | | | | • (| | ** |
| | $\overline{}$ | Marks/Cl | • | | | Drill Holes | Г | Off-set | | | | | | |
| | | | Sequence | | | Finish | | Out of 0 | Calibration | | | | | |
| | | 1 | vist in Tub | e | | Fit/Function | | Out of S | Sequence | | | | | |

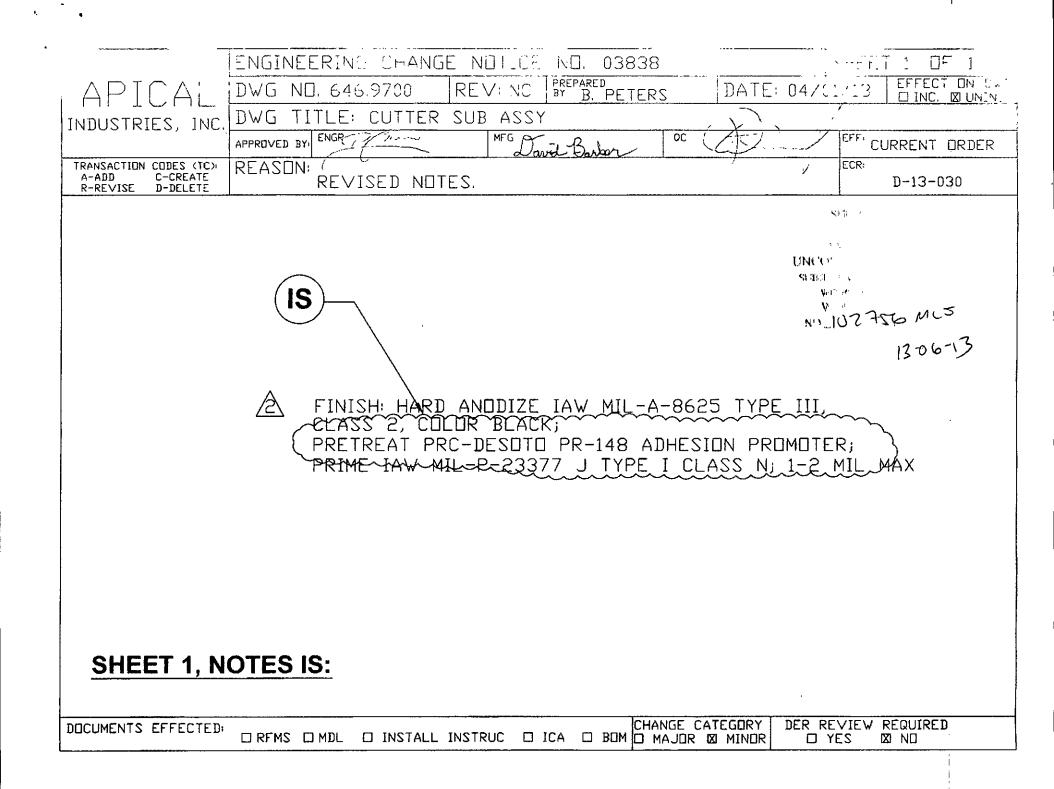
| DART AEROSPACE LTD | Work Order: | 102 756 |
|-----------------------------------|--------------|-------------|
| Description: Blade | Part Number: | 646.9711 |
| Inspection Dwg: 646.9700 Rev: N/C | | Page 1 of 1 |

FIRST ARTICLE INSPECTION CHECKLIST

| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|----------------------|-----------------|-------------------------|----------|----------|-------------------------|-------------|
| 0.340 | +0.000/-0.005 | 0 · 335 | 1 | | | |
| Ø0.177 | +0.005/-0.001 | 0-177 | I | | Caliper | MH-04 |
| 3,200 | +/-0.005 | 3.7 | 1 | | Caliper | MH -04 |
| 0.500 | +/-0.005 | -501 | V | | Califer | MH-04 |
| 0.985 | +/-0.005 | -986 | 1 | | cali per | MH -04 |
| 4.500 | +/-0.005 | 4.5 | √ | | Caliber | MH - 04 |
| 2.400 | +/-0.005 | 2.399 | V | | Callper | MH -04 |
| 1.200 | +/-0.005 | 1.194 | 1 | | Caliber | MH-04 |
| 1.500 | +/-0.005 | 1.500 | ٧. | | Caliper | MH-04 |
| 0.250 | +/-0.005 | :150 | J | | ealiper | 1NH -0H |
| 37.2° | 0.5° | 37.2° | 1, | | raportes e | MH-07 |
| 0.29 x 30° | +/-0.010 x 0.5° | ° 2 6 × 350° | 1 | | outreed angle | NH-04/WH-07 |
| | | | | | | |
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| Meas | ured by: M | 14 Jons | Audited by: | ۵۵ | 08 08 | Preliminary Approval: | |
|----------|------------|-----------|-------------|----------|----------|-----------------------|----------|
| | Date: | 13/06/28 | Date: | 13/07/01 | 3-83 | Date: | |
| Rev | Date | Change | | | · | Revised by | Approved |
| <u>A</u> | 13.06.03 | New Issue | | | | KJ 🙌 | |

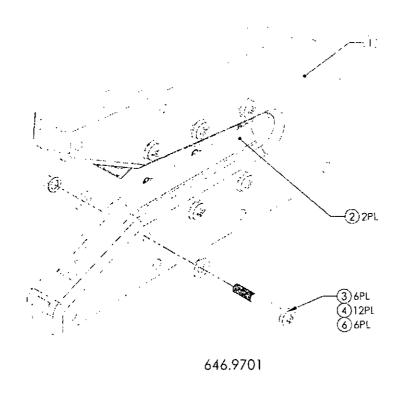
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| Α | PICAL | DW | G N | <u>0. · 6</u> 4 | 6.9700 | REV:N/ | PREPARED BY | S,HUFF | DAT | E: 01/07/1 | C EFFECT | ON DW 3 UNINC |
| ITNDU | JSTRIES, INC. | DW | G T | ITLE: | | CL | ITTER S | UB ASS) | <u>(</u> | | | |
| | | APPRO | | Y: ENGR | | MEG Car | | -3-y 6C | Maul | Fizon EFF | NEXI URDE | R |
| A-AL | ACTION CODES (TC): DD C-CREATE CVISE D-DELETE | RE4 | 42 <u>D</u> N | V RE&ISE | ID SCREW | LENGTH, (| CHANNEL V | I & ZHTŒĪV | DIMĚNSIÓN | ING SCHEME | SHEET 5. | |
| SHI | <u>EET 2, ZONE C</u> | 5, IS | | | <u>S</u> | HEET 5, ZI | INE C2, I | <u>S</u> : | | 1-13 | | |
| | 352 005 a | 7 } | 675- | A 384 A 384 | 250 | x x | 3 20 | 702 | 69: 750 8 750 8 750 | 985 | (600°) | YP |
| 3 R | 601.3157 | | 12 | SCREV | <u> </u> | | | | MS27039-08 | 18 | | |
| | | | .9701 | | | | | | | | | |
| F/N TC | PART NUMBER | QT | | DESCRI | NOITS | | · | | MATERIA | AL/SPECIFIC | ATION | |
| DOCUM | ENTS EFFECTED: | | MDL | □ INSTAL | L INSTRUC | X ICA E | FMS 🖾 B | CHANGE DM D MAJOR | CATEGURY Ø MINOR | DER REVIEV | √ REQUIRED 図 NO | |

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A CONTROL OF THE WORKS TAST POR A RE-

C ASS 2 TO COP BLACK.
C ASS 2 TO COP BLACK.
C ASS 2 TO COP BLACK.
CAROMAL 4501 SO PRETREATMENT PRIMEP
PRIME IAW MICHPL23377J TYPE LICLASS N. 1-2 M.L.MAX.

AS MATERIAL AISTAZ TOOLSTEH CONDITION ANNEALED POST PROJESS: HEAT TREAT TO 58-67 BG POORWELL HAREFIESS

4. FINISH, PRIME IAW MIL-F-23377 J TYPE I CLASS Nº 1-2 MIL MAX

5. DEBURB AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED

6. IDENTIFY IAW MPP-120

APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY

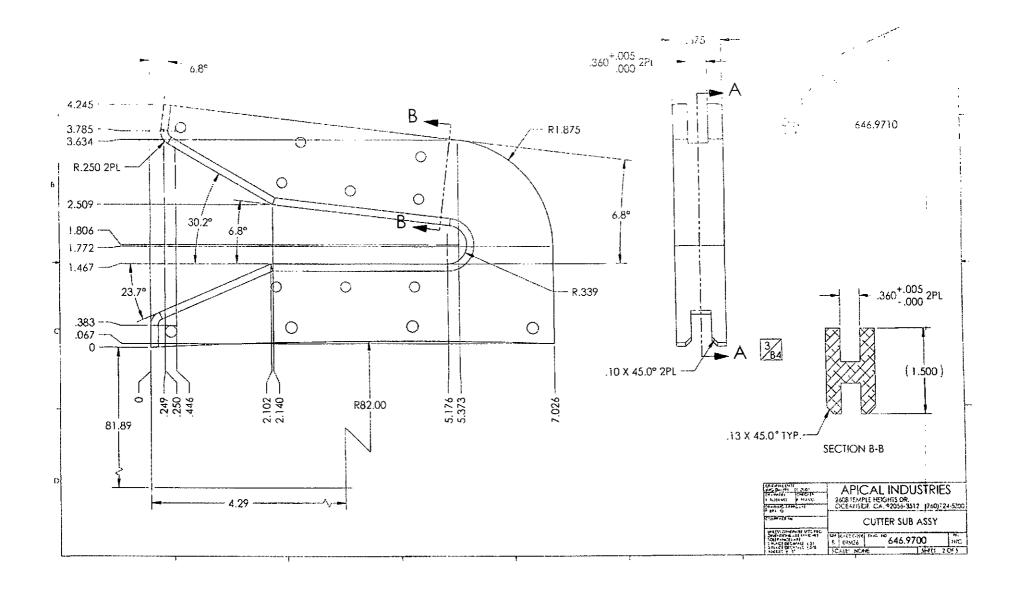
(A) CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE

UNINCORPORATED ECN(s)

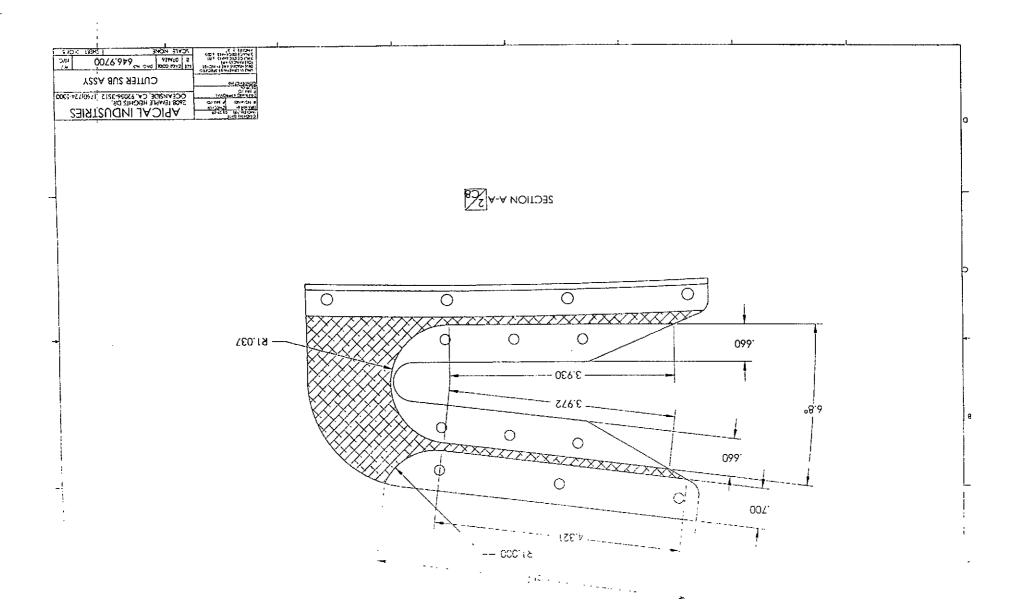
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| NEX G | 1 XSSY [5 | | MIL KACI | | INDUST | RIE\$ |
| يل | 6°01 | HND 1 | PART 4 | DESCRIPTION PARTS LIST | MATE | SPEC. |
| | \times | | 646 9701 | CUTTER SUB ASSY | <u> </u> | |
| 1_ | ; | 1 | 646,9710 | ВООУ | | |
| Т | 1 2 | 2 | 646 2711 | BLADE | | $\Delta \lambda$ |
| 7 | · · | 3 | 601.2765 | SCPEW | W/Unicogia | |
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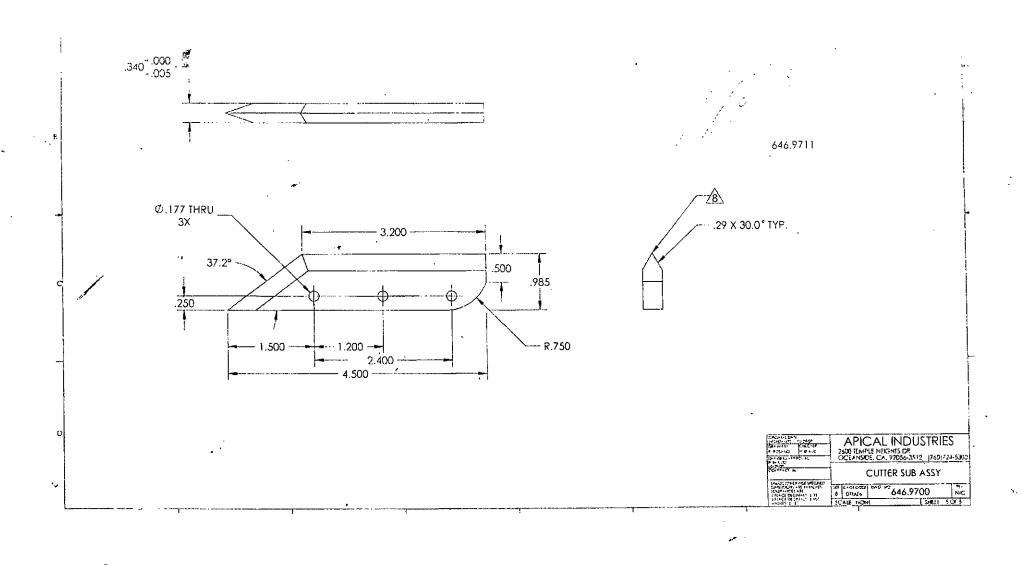


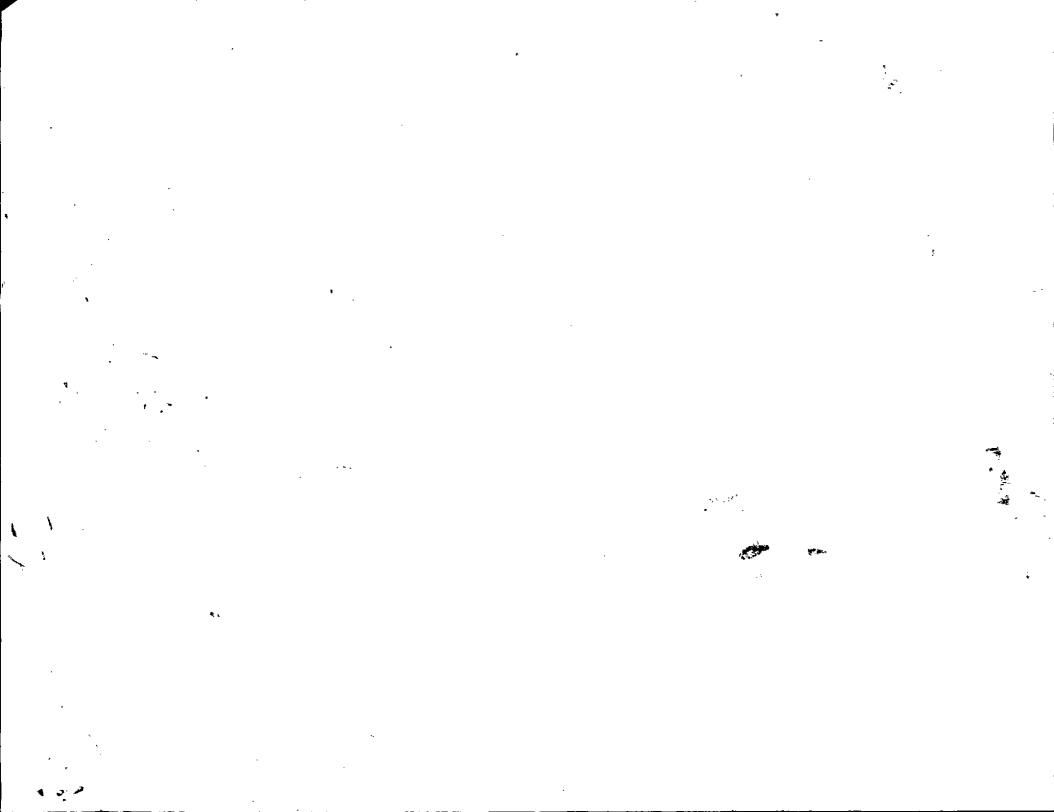
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METCOR INC.

560 BOUL. ARTHUR-SAUVÉ ST-EUSTACHE, QC J7R 5A8 Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

| BON DE TRAVAIL | EXPÉDITEUR | BON D'EXPÉDITION |
|----------------|------------|------------------|
| Order | Shipper ID | Shipper |
| 187758 | 1 | 73273 |

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT / Customer

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215

DART AEROSPACE 1270 ABERDEEN

HAWKESBURY, ON K6A 1K7

Ph: 613-632-5200 Fax: 613-632-1053 LIVRÉ À /Shipped To

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY, ON K6A 1K7

Ph: 613-632-5200 Fax: 613-632-1053

| COMMANDÉ I | | BON DE LIVRAISON DU CLIENT | TYPE DE MATÉRIEL | DATE DE LA COMMANDE | TRANSPORTEUR |
|-----------------|-----------|------------------------------|------------------|---------------------|--------------|
| Custome | | Customer Shipper No. | Material Type | Order Date | Carrier |
| PO20 | 425 | | A2 | 2013/7/5 | FEDEX |
| QUANTITÉ | No. PIÈCI | E / NOM DE LA PIÈCE / | DESCRIPTION DI | | POIDS |
| Quantity | Part No. | Part Name | Part Descripti | | Weight |

66 646.9711

(60) BLADE

REFERENCE: 102756

58-62 RC

MATERIAL: A2

(6) 646-3316_BLADE___

REFERENCE 102893

58-62 RC

MATERIAL: A2

CONTENANT: 1 BOÎTE DE CARTON

CERTIFICAT

QUANTITÉ EXPÉDIÉE /Quantity Shipped:

66

20.

POIDS EXPÉDIÉ / Weight Shipped :

20,00

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2013/07/18

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METCOR INC.

560 BOUL. ARTHUR-SAUVÉ ST-EUSTACHE, QC J7R 5A8 Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

| BON DE TRAVAIL | EXPÉDITEUR | BON D'EXPÉDITION |
|----------------|------------|------------------|
| Order | Shipper ID | Shipper |
| 187758 | 1 | 73273 |

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT / Customer

215

DART AEROSPACE 1270 ABERDEEN

HAWKESBURY, ON K6A 1K7

Ph: 613-632-5200 Fax: 613-632-1053 LIVRÉ À /Shipped To

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY, ON K6A 1K7

Ph: 613-632-5200 Fax: 613-632-1053

| COMMANDE DU CLIENT | BON DE LIVRAISON DU CLIENT | TYPE DE MATÉRIEL | DATE DE LA COMMANDI | TRANSPORTEUR |
|--------------------|----------------------------|------------------|---------------------|--------------|
| Customer PO | Customer Shipper No. | Material Type | Order Date | Carrier |
| PO20425 | | A2 | 2013/7/5 | FEDEX |

| TYPE DE CONTENEUR Container Type | # DE CONTENEURS # Of Containers | COMMENTAIRES CONTENEUR Container Comments |
|----------------------------------|------------------------------------|---|
| BOITE DE CARTON | . 1 | |

CERTIFICAT

| 66 | QUANTITÉ EXPÉDIÉE / Quantity Shipped : | |
|-------|--|----------------------------|
| 20,00 | POIDS EXPÉDIÉ / Weight Shipped : | EMPAQUETAGE Packing |
| 0 | QUANTITÉ RESTANTE / Quantity Remaining : | Ū. |
| 0,00 | POIDS RESTANT / Weight Remaining : | |

CERTIFICAT

66 QUANTITÉ EXPÉDIÉE /Quantity Shipped:

POIDS EXPÉDIÉ / Weight Shipped:

20.00

Signature:

Date:

EXPÉDIÉ LE / Shipped On: 2013/07/18

| , | | | |
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560, boul. Arthur-Sauvé, St-Eustache (Québec) J7R 5A8 Tél. 450 473-1884 Télécopieur/Fax administration 450 491-5498 Télécopieur/Fax production 450 491-6454

Rapport d'Inspection

Inspection Report

| BON DE TRAVAIL order | CHARGEMENT load |
|----------------------|-----------------|
| 187758 | 1 |

CLIENT / customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to: DART AEROSPACE 1270 ABERDEEN HAWKESBURY

ON KBA 1K7

| COMMANDE DU CLIENT customer po | BON DE LURAISON DU CLIENT | MATÉRIEL | CODE DE TRAITEMENT | NUMÉRO DE LOT |
|--------------------------------|---------------------------|----------|--------------------|---------------|
| | CUSTOMET Shipper no. | material | mat'l heat code | lot number |
| PO20425 | | A2 | | |

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed RÉSULTATS DE TESTS / results
HARDNESS 58-62 HRC 58-0-80.0 HRC 58-0-80.0 HRC

| QUANTITÉ quantity | POIDS weight | DESCRIPTION DES PIÈCES parts description |
|-------------------|---------------------------|--|
| 66 | 20 | 646.9711 |
| | | (60) SLADE |
| ! | | REFERENCE: 102756 |
| | | 58-62 RC |
| | | MATERIAL: A2 |
| | | (6) 646.3316 BLADE |
| | | REFERENCE 102893 |
| | | 58-62 RC |
| ; | To the Section Control of | MATERIAL: A2 |
| | ŧ | CONTENANT: 1 BOÎTE DE CARTON |

COMMENTAIRES / comments

CERTIFIÉ par / Certified by:

METCOH)

DATE: 2013-07-18

BULLET

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METCOR INC.

560 BOUL. ARTHUR-SAUVÉ ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé,

Detailed Certificate of Compliance

| BON DE TRAVAIL | CHARGEMENT |
|----------------|------------|
| order | load |
| 187758 | 1 |

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CLIENT / customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to: DART AEROSPACE 1270 ABERDEEN HAWKESBURY

ON K6A 1K7

| COMMANDE | DU CLIENT. | BON DE LIVRAISON DU CLIENT | MATÉRIEL | CODE DE TRAITEMENT | NUMÉRO DE LOT |
|-------------------|--------------------|---|----------------------|----------------------------|-----------------------------|
| custome | er po | customer shipper no | material | mat'l heat code | lot number. |
| PO204 | 425 | | A2 | | |
| | | | TIONS DU PROCÉ | DÉ | |
| | | proces | ssing specifications | | |
| VAC HARDEN | | | | | |
| | • | | | | |
| HARDEN AND | TEMPER | | | | |
| XIGENCE / rec | uirement SI | PÉCIFICATIONS / specified | TESTS EXÉCUTÉS | / performed RÉSULTA | TS DE TESTS / resu |
| HARDNESS | | 3 - 62 HRC | 5 | 58.0 - 60.0 | |
| OHANTITÉ | 00:00 | T proprietavi pro pi | 20-0 | | |
| QUANTITÉ quantity | POIDS weight | DESCRIPTION DES PI parts description | ECES | | |
| 66 | 20 | 646.9711 | | | |
| | | (60) BLADE | | | |
| | | REFERENCE: 102756 58-62 RC | | | |
| | | MATERIAL: A2 | | | |
| | | (6) 646.3316 BLADE | | | |
| | | RÉFERENCE 102893 | | | |
| | | 58-62 RC | | | |
| | | MATERIAL: A2 | | | |
| . , | , m. m | CONTENANT: 1 BOÎTI | E DE CARTON | | |
| Temo. | spécifiée Temps de | trempe Atmosphere Carbone | Q-Media Four# | Date Départ Heure d'entrée | Heure de sortielDate Comolé |
| | fied Temp Specifie | ane i Carbon | Q-Temp Fumace # | 1 1 1 | Time Out Date comple |

| Operation | Temp. spécifiée Specified Temp | Temps de trempe Spécifié Specified Soak Temp | Atmosphere | Carbone Carbon Potential | Q-Media Q-Temp | Four # Furnace # | Date Départ Start Date | Heure d'entrée Time In | Heure de sortie Time Out | Date Complétée Date complete |
|---------------------|-----------------------------------|---|------------------|--------------------------------|-------------------|---------------------|---------------------------|---------------------------|-----------------------------|---------------------------------|
| 1.00 CONT. INIT. | LAVAGE | | si nécessaire | | | | | | | |
| 2.00 PREPARING | COMPTAGE | | | | | | | | | |
| 3.00 PREHEAT 1 | | 0:30 | VAC | i | | 390 | | | | - |
| 4.00 PREHEAT 2 | | 0:30 | VAC | | | 390 | | | | |
| 5.00 VAC HARDE | • | 1 hrs | VAC | | AZOTE | 390 | | | | |

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METCOR INC. 560 BOUL. ARTHUR-SAUVÉ ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

| BON DE TRAVAIL | CHARGEMENT | | |
|----------------|------------|--|--|
| order | load | | |
| 187758 | 1 | | |

CLIENT / customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to: DART AEROSPACE 1270 ABERDEEN HAWKESBURY

ON K6A 1K7

| Operation | Temp. spécifiée Specified Temp | Temps de trempe Spécifié Specified Soak Temp | Atmosphere | Carbone Carbon Potential | Q-Media Q-Temp | Four# Furnace# | Date Départ Start Date | Heure d'entrée Time In | Heure de sortie Time Out | Date Complétée Date complete |
|--------------------|-----------------------------------|---|------------|--------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|---------------------------------|
| 6.00 TEMPER | 450 | 3 hrs | AIR | - | | 654 | | | <u></u> | |
| 7.00 TEMPER 2 | 450 | 3 hrs | AIR | | | 654 | | | | |
| 8.00 HARDN INS | | | | | | | | | | |
| 9.00 FINAL INSP | , | | | | | | 07-18-2013 | | | 07-18-2013 |

COMMENTAIRES / comments

Le traitement thermique a été fait en utilisant des équipements en conformité avec la spécification demandée.

Toutes les opérations de traitement thermique ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandées ont été faites et documentés.

Aucun changement ou dérogation n'a été faite par rapport au traitement thermique demandé.

On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiés.

All the heat treatment processing performed on this order was accomplished using heat treatment equipment compliant with the requested heat treatment specification.

All the heat treatment operations were accomplished in accordance with the requested/required heat treatment specification and all required verifications test have been performed and documented.

No unauthorized changes or deviations to required heat treatment specifications or procedures have been performed. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

| APPROUVÉ par / Approved by: | Joseph John John John John John John John Joh | DATE: 2013-07-18 |
|-----------------------------|---|------------------|
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/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client./We certify that all the information on this report is exact and in accordance with the order requirements.

F-000-20 REV.B

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